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EXAMINER	
ARMSTRONG, ANGELA A	

ART UNIT	PAPER NUMBER
2654	28

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/499,999	SU, HUAN-YU	
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-27,45,48 and 49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-27,45,48 and 49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed August 27, 2003, applicant has submitted an amendment to cancel claims 1-5, 7, 9-15, 42-44, 46-47, and 50-60 and amend claims 16 and 22.

Claim Objections

2. Claim 27 is objected to because of the following informalities: Applicant's status of the claims as presented in the amendment indicates claim 27 as "Original" with claim limitations (see page 4 of amendment) and as "Cancelled", included with the listing of a group cancelled claims (see page 5 of amendment). For further prosecution, the Examiner assumes the claim is a pending claim and has been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 16, 18-21 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley (US Patent No. 6,104,993) in view of Otani (US Patent No. 6,400.693).

4. Ashley discloses an apparatus and method for rate determination in a communication system.

5. Regarding claim 16, Ashley discloses the system is beneficial for rate determination in a communication system and is independent of the type of speech coder for which it is implemented (col. 2, lines 6-10), which reads on "a method for enhancing an installed speech coding system that has been in use for encoding a speech signal including a plurality of speech signal frames." Ashley teaches providing a rate determination module at col. 3, lines 61-64, connecting the rate determinator module to said installed speech coding system at col. 4, lines 4-5, receiving a plurality of speech signal frames by said rate determinator, at col. 3, lines 61-64, and determining a data rate of one of said speech signal frames by said rate determinator and determining, selecting and encoding so as to encode a speech signal frame-by-frame, at col. 2, lines 54-65.

Ashley does not teach that the installed speech coding system includes a plurality of installed speech encoders, or the specifics of selecting one a said installed plurality of speech encoders according to the data rate, said installed speech encoders including at least a first encoder using a first encoding scheme and a second encoder using a second speech encoding scheme different from said first speech encoding scheme, wherein said first encoder is a fixed bit-rate encoder incapable of rate determination and encoding said one of said speech signal frames using said one of said plurality speech encoders.

Otani discloses a communications apparatus for multimedia information which implements a plurality of encoding schemes to implement the encoding of a variety of data, such as audio and video data for use in a television telephone apparatus or video-conferencing (col. 1, lines 9-12 and col. 8, lines 14-24). Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP. Additionally,

Otani discloses the selection of different encoders at different rates for encoding and transmission of image only, voice only, and a combination of image and voice (col. 12, lines 44-55).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement multiple encoding schemes as taught by Otani, for implementation in a television-telephone environment.

Regarding claim 18, at col. 2, lines 54-65, Ashley teaches the apparatus processes the current frame and provides a voice metric used for determining rates of 1/8, ½, and full rates, which reads on "wherein said data signal includes a first frame and a second frame, and wherein said first frame is encoded using said first encoders and said second frame is encoded using said second encoders."

Regarding claim 45, Ashley does not specifically teach implementation of G.729 ITU or G.723.1 ITU speech coders. Otani discloses application of encoding schemes for LD-CELP, at col. 8, lines 22-23, which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP coding schemes as taught by Otani, to perform G.729 ITU and G.723.1 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

Regarding claim 19, Ashley teaches processing frames of speech at col. 4, lines 31-32.

Regarding claim 20, Ashley does not specifically teach implementation of G.729 ITU speech coders. Otani discloses application of encoding schemes for LD-CELP, at col. 8, lines 22-23, which reads on "speech data signal encoders include G.729 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP coding schemes as taught by Otani, to perform G.729 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

Regarding claim 21, Ashley does not specifically teach implementation of G.729 ITU or G.726 ITU speech coders. Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP, at col. 8, lines 22-23, which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.726 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP, PCM, and/or ADPCM coding schemes as taught by Otani, to perform G.729 ITU and G.726 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

6. Claims 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley (US Patent No. 6,104,993) in view of Otani (US Patent No. 6,400.693) in further view of Stewart.

7. Regarding claim 22, Ashley discloses the system is beneficial for rate determination in a communication system and is independent of the type of speech coder for which it is implemented (col. 2, lines 6-10), which reads on "a method for enhancing an installed speech coding system that has been in use for encoding a speech signal including a plurality of speech signal frames." Ashley teaches providing a rate determination module at col. 3, lines 61-64, connecting the rate determinator module to said installed speech coding system at col. 4, lines 4-5, receiving a plurality of speech signal frames by said rate determinator, at col. 3, lines 61-64, and determining a data rate of one of said speech signal frames by said rate determinator and determining, selecting and encoding so as to encode a speech signal frame-by-frame, at col. 2, lines 54-65.

Ashley does not teach that the installed speech coding system chooses one group from a plurality of groups of installed speech encoders.

Stewart discloses a controlling DSP for passing rate selections to encoders at Figure 6, element 603, which reads on "choosing according to a predetermined factor, one group from a plurality of groups of speech encoders." Stewart further discloses at Figure 1, element 105 a plurality of speech data encoders. Stewart teaches implementation and the advantages of group coding at col. 5, line 44-col. 7, line 35, so as to provide enhanced system capacity (col. 1, line 12).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement group encoding as suggested by Stewart, for the purpose of providing enhanced system capacity, as taught by Stewart.

Ashley does not teach the said installed speech encoders including at least a first encoder using a first encoding scheme and a second encoder using a second speech encoding scheme different from said first speech encoding scheme, wherein said first encoder is a fixed bit-rate encoder incapable of rate determination and encoding said one of said speech signal frames using said one of said plurality speech encoders.

Otani discloses a communications apparatus for multimedia information which implements a plurality of encoding schemes to implement the encoding of a variety of data, such as audio and video data for use in a television telephone apparatus or video-conferencing (col. 1, lines 9-12 and col. 8, lines 14-24). Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP. Additionally, Otani discloses the selection of different encoders at different rates for encoding and transmission of image only, voice only, and a combination of image and voice (col. 12, lines 44-55).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement multiple encoding schemes as taught by Otani, for implementation in a television-telephone environment.

Regarding claim 23, Ashley does not specifically teach implementation of G.729 ITU speech coders. Otani discloses application of encoding schemes for LD-CELP, at col. 8, lines 22-23, and, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can

implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP coding schemes as taught by Otani, to perform G.729 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

Regarding claim 24, Ashley does not specifically teach implementation of G.729 ITU or G.723.1 ITU speech coders. Otani discloses application of encoding schemes for LD-CELP, at col. 8, lines 22-23, and Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP) at col. 4, line 64 continuing to col. 5, line 5, which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP coding schemes as taught by Otani, to perform G.729 ITU and G.723.1 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

Regarding claims 25-26, Ashley does not teach a network controller capable of selecting two or more encoder groups. Stewart discloses a controlling DSP for passing rate selections to

encoders at Figure 6, element 603, which reads on "network controller is capable of selecting two or more speech data signal encoder groups."

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement group encoding as suggested by Stewart, for the purpose of providing enhanced system capacity, as taught by Stewart.

Regarding claim 27, Ashley does not specifically teach implementation of G.729 ITU or G.721 ITU speech coders. Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP, at col. 8, lines 22-23, which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.721 ITU compliant speech encoders." Otani suggests a plurality of encoding schemes to implement the encoding of a variety of data in a multimedia environment.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley to implement CELP, PCM, and/or ADPCM coding schemes as taught by Otani, to perform G.729 ITU and G.726 ITU compliant coding, for the purpose providing optimum encoding capabilities in the system so as to adequately encode a variety of data.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley in view of Otani, and further in view of Taumi et al (US Patent No. 6,006,178).

9. Regarding claim 17, Ashley and Otani teach everything as claimed in claim 16. However, neither Ashley nor Otani specifically teach that the frames are 10ms in length.

However, implementation of speech signal processing with speech frames of 10ms in length was well known in the art.

In a similar field of endeavor, Taumi discloses a speech encoder for encoding a speech or voice signal with a high quality at a short frame period or length of 5ms to 10ms (col. 1, lines 8-12).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley and Otani and implement short frame periods of 5ms to 10ms, as taught by Taumi, for the purpose of achieving high quality encoding as suggested by Taumi.

10. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley in view of Otani, and further in view of DeJaco (US Patent No. 5,911,128).

11. Regarding claim 48, Ashley and Otani do not specifically disclose that the speech data rate determinator determines the data rate based on a speech classification of a frame. However, selecting a data rate for speech encoding based on speech classification was well known in the art.

In a similar field of endeavor, DeJaco discloses a method and apparatus for performing speech frame encoding mode selection in a variable rate encoding system. Specifically, at col. 6, lines 50-63, DeJaco describes implementation of full, half or quarter rates based on voiced or unvoiced classification of the speech signal. DeJaco teaches that encoding mode selection is advantageous because it provides for more rate efficient coding (Abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley and Otani to implement encoding mode selection based on speech classification, as taught by DeJaco, for the purpose of providing rate efficient coding.

12. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ashley in view of Stewart and Otani, and further in view of DeJaco (US Patent No. 5,911,128).

13. Regarding claim 49, Ashley, Stewart, and Otani do not specifically disclose that the speech data rate determinator determines the data rate based on a speech classification of a frame. However, selecting a data rate for speech encoding based on speech classification was well known in the art.

In a similar field of endeavor, DeJaco discloses a method and apparatus for performing speech frame encoding mode selection in a variable rate encoding system. Specifically, at col. 6, lines 50-63, DeJaco describes implementation of full, half or quarter rates based on voiced or unvoiced classification of the speech signal. DeJaco teaches that encoding mode selection is advantageous because it provides for more rate efficient coding (Abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Ashley, Stewart, and Otani to implement encoding mode selection based on speech classification, as taught by DeJaco, for the purpose of providing rate efficient coding.

Response to Arguments

14. Applicant's arguments with respect to claims 16-27, 45 and 48-49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
January 24, 2004

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER